GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Technical Mechanics 1, PG_00042000		
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2020/2021
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Theory and Ship Design -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Czesław Szymczak	
	Teachers	dr inż. Arkadiusz Sitarski dr hab. inż. Bogdan Rozmarynowski dr hab. inż. Marcin Abramski prof. dr hab. inż. Czesław Szymczak	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	15.0	0.0	0.0	0.0	45

E-learning hours included: 0.0

Adresy na platformie eNauczanie:
Technichnical Mechanics 1 Tutorials Gr 1-2-5 (PG_00042000) - Moodle ID: 12486
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=12486

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	45	5.0	25.0	75

Subject objectives

Teaching of the theoretical mechanics basis within statics, kinematics and dynamics of material point, system of material points and rigid body is an objective of the technical mechanics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K01	Student knows equilibrium equations of forces and can determine movement of structure elements subjected to loads.	[SK2] Assessment of progress of work
K6_W04	Student can carry out static analysis of simple structures and estimate dynamic effects on it.	[SW1] Assessment of factual knowledge

Subject contents

1) Introduction, 2) Calculus of vectors, 3) Equilibrium of forces, 4) Reactions and internal forces in structures, 5) Kinematics of particle, system of particles and rigid body, 6) Principles and basic theorems of dynamics , 7) Equations of motion of particles and system of particles, 8) Equations of rigid body motion , 9) Collisions of particles, 10) Lagrange equations, 11) Vibration of particles, 12) Gyroscopic effects

Prerequisites and co-requisites

none

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written colloquiums	20.0%	60.0%
Written exam	10.0%	40.0%

Recommended reading	Basic literature	1) Spiegel M. R., Theoretical Mechanics,Mc Graw -Hill, 1967, 2) Beer F.P., Johnston E.R., Vector Mechanics for Engineers, Statics, Dynamics, McGraw-Hill, 1983 3) Sandor B.I., engineering Mechanics, Statics, Dynamics, Prentice-Hall, 1987.
	Supplementary literature	Goldstein H., Classical Mechanics, Addison-Wesley, 2001
	eResources addresses	Technichnical Mechanics 1 Tutorials Gr 1-2-5 (PG_00042000) - Moodle ID: 12486 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=12486
Example issues/ example questions/ tasks being completed	- Reactions and internal forces in plane frame - Plane motion - Relative motion of particle - Corriolis acceleretion and forces	
Work placement	Not applicable	